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| EXAMINER | |
|---|---|
| PERRY, ANTHONY T | |
| ART UNIT | PAPER NUMBER |
| 2879 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/524,985 | SCHRADER, MARTIN | |
| | Examiner | Art Unit | |
| | ANTHONY T. PERRY | 2879 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *01 March 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *26-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *26-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 26, 29, 30, and 33-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Kawanami et al. (US 6,603,444).

Regarding claim 26, Kawanami et al. disclose a display device comprising: a substrate layer (102) comprising substantially transparent material; a pinhole mask (109) comprising an array of pinholes, wherein each pinhole of the array of pinholes is associated with a pixel of the display device; and an array of electrically controllable lenses (106) positioned between the substrate layer and the pinhole mask to control the divergence of light received through the substrate and the lenses towards the pinhole mask, wherein the light is focused into a pinhole by a lens of the array of electrically controllable lenses to illuminate the associated pixel and is transmitted unfocused by the lens to darken the associated pixel (for example, see abstract and Figs, 1A and 1B).

Regarding claim 29, Kwanami et al. disclose the display device of claim 26, wherein a brightness of the associated pixel is controlled using a focus value of the lens (for example, see abstract and Figs, 1A and 1B).

Regarding claim 30, Kawanami et al. disclose the display device of claim 26, wherein a brightness of the associated pixel is controlled through adjustment of an on-off duty cycle of the lens (for example, see abstract and Figs, 1A and 1B).

Regarding claim 33, Kawanami et al. disclose a method of operating a display device, the method comprising: receiving light in a display device at an array of electrically controllable lenses (106); determining whether to illuminate a pixel of the display device; and if it is determined to illuminate the pixel, controlling a lens of the array of electrically controllable lenses to focus the received light into a pinhole of an array of pinholes (for example, see abstract and Figs, 1A and 1B).

Regarding claim 34, Kawanami et al. disclose the method of claim 33, further comprising if it is determined not to illuminate the pixel, allowing the received light to pass through the lens unfocused wherein the unfocused light is substantially blocked by a pinhole mask including the array of pinholes (for example, see abstract and Figs, 1A and 1B).

Regarding claim 35, Kawanami et al. disclose the method of claim 33, further comprising controlling a brightness of the pixel using a focus value of the lens (for example, see abstract and Figs, 1A and 1B).

Regarding claim 36, Kawanami et al. disclose the method of claim 33, further comprising controlling a brightness of the pixel by adjusting an on-off duty cycle of the lens (for example, see abstract and Figs, 1A and 1B).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 27, 28, 37, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawanami et al. (US 6,603,444) in view of Schachar (US 5,731,909).

Regarding claims 27 and 28, Kawanmi et al. disclose the claimed invention of claim 26, but do not specifically recite that the lens comprises a liquid crystal based switchable lens made of deformable viscoelastic gel material. However, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. Schachar teaches that liquid crystal based switchable lenses made of electrically deformable viscoelastic gel material are known in the art of electrically controllable lenses (for example, see col. 2, lines 18-25 and col. 5, line 44 – col. 6, line 12). Thus, it would have been obvious to one having ordinary skills in the art at the time the invention was made to have reasonably contemplated using a liquid crystal based switchable lens made of a deformable viscoelastic gel material for the lens, since the selection of known materials for a known purpose is within the skill of the art.

Regarding claims 37 and 38, Kawanmi et al. disclose the claimed invention of claim 26, but do not specifically recite that the lens comprises a liquid crystal based switchable lens made of deformable viscoelastic gel material. However, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. Schachar teaches that liquid crystal based switchable lenses made of electrically deformable viscoelastic gel material are known in the art of electrically controllable lenses (for example, see col. 2, lines 18-25 and col. 5, line 44 – col. 6,

line 12). Thus, it would have been obvious to one having ordinary skills in the art at the time the invention was made to have reasonably contemplated using a liquid crystal based switchable lens made of a deformable viscoelastic gel material for the lens, since the selection of known materials for a known purpose is within the skill of the art.

Claims 31 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawanami et al. (US 6,603,444) in view of Sako et al. (US 2001/0004279).

Regarding claim 31, Kawanami et al. do not specifically recite the pinholes comprising a reflective mirror configured to reflect light back in the direction of the lens. However, reflective-type displays are a known alternative to transmissive-type displays, as evidenced by the Sako reference. Sako shows a reflective-type display in figure 1, wherein the pinhole comprises a reflective mirror (107) configured to reflect light back in the direction of the source of the light and shows the alternative transmissive-type display in figure 6, wherein light generated from a backlight (115) is transmitted through the pinhole (117) of the mask. Reflective-type displays may use ambient light instead of a backlight device which allows less power consumption and allows for a display that is light and easy to carry. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide reflective mirrors positioned in the pinholes of the mask of the Kawanami reference such that the mirrors reflect the light back in the direction of the lenses in order to provide a lower power consuming reflective-type display device, wherein ambient light is used as the light source of the device.

Regarding claim 39, Kawanami et al. do not specifically recite the pinholes comprising a reflective mirror configured to reflect light back in the direction of the lens. However, reflective-type displays are a known alternative to transmissive-type displays, as evidenced by the Sako

reference. Sako shows a reflective-type display in figure 1, wherein the pinhole comprises a reflective mirror (107) configured to reflect light back in the direction of the source of the light and shows the alternative transmissive-type display in figure 6, wherein light generated from a backlight (115) is transmitted through the pinholes (117) of the mask. Reflective-type displays use ambient light instead of a backlight device which allows less power consumption and allows for a display that is light and easy to carry. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide reflective mirrors positioned in the pinholes of the mask of the Kawanami reference such that the mirrors reflect the light back in the direction of the lenses in order to provide a lower power consuming reflective-type display device, wherein ambient light is used as the light source of the device.

Claims 32 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawanami et al. (US 6,603,444) in view of Do et al. (US 5,608,554).

Regarding claim 32, Kawanami et al. disclose the display device according to claim 26, but do not specifically teach the use of phosphors, and instead teach the light directed through the pinhole passing through color filters. However, Do et al. teach replacing color filters with different types of phosphor materials (8) in order to provide a fluorescent display device (for example, see Fig. 2). Do et al. teach that using phosphor materials instead of color filters provides a display with a greater luminance (for example, see the abstract). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the color filters of the Kawanami reference with phosphor materials in order to provide a brighter display with a wider viewing angle.

Regarding claim 40, Kawanami et al. the method of claim 33, but do not specifically teach the use of phosphors, and instead teach the light directed through the pinhole passing through color filters. However, Do et al. teach replacing color filters with different types of phosphor materials (8) in order to provide a fluorescent display device (for example, see Fig. 2). Do et al. teach that using phosphor materials instead of color filters provides a display with a greater luminance (for example, see the abstract). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the color filters of the Kawanami reference with phosphor materials in order to provide a brighter display with a wider viewing angle.

### *Response to Arguments*

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

### *Conclusion*

Applicant's amendment, filed 12/23/08, necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Anthony Perry* whose telephone number is **(571) 272-2459**. The examiner can normally be reached between the hours of 9:00AM to 5:30PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. **The fax phone number for this Group is (571) 273-8300.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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